

safe equipment for HCWs in Africa and in resource-limited settings. The current Ebola outbreak in Africa emphasizes the urgent need for such developments.

ACKNOWLEDGMENTS

Financial support: Financial support for the program conducted at NNH was provided by ESTHER, a French Public Agency that promote access to care for people living with HIV in developing countries. Additional support for this action was provided by the African Partnership for Patient Safety.

Potential conflicts of interest: All authors report no conflict of interest relevant to this letter.

Author contributions: All authors made substantial contributions to the implementation of the program of action, to the collection of data, or to the writing of the letter. All authors approved the submitted version of the letter.

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Infect Control Hosp Epidemiol 2015;36(3):361–362

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Veterans Affairs Medical Center Employee Comments Suggest Additional Educational Targets to Improve Influenza Vaccination Campaigns

To the Editor—The Veterans Health Administration strongly encourages all employees to receive an annual influenza vaccine, with the goal of achieving a 90% vaccination rate among healthcare personnel (HCP) by 2020.¹ A nationwide survey conducted by Schult et al. queried reasons that Veterans Affairs employees did not get the 2009–2010 influenza vaccine, offering 12 specific reasons for declining the vaccine.² Interactions with employees at two Veterans Affairs Medical Centers (VAMCs) raised the possibility of a wider array of reasons for vaccine refusal. We surveyed employees at both VAMCs regarding their reasons for accepting or declining the influenza vaccine in the 2013–2014 season, including the option to explain their views using comments entered as free text.

The institutional review boards at both participating facilities reviewed and approved the survey and study design. Employees at two VAMCs were invited via e-mail to participate in an anonymous, voluntary survey, accessed through an Internet link, that took <5 minutes to complete (Qualtrics, Provo, UT). The survey included questions similar to those

TABLE 1. Examples of Comments from Respondents Who Reported Not Getting the Influenza Vaccine

Theme	Examples of Respondent Comments ^a
Alternative protection strategies	<ul style="list-style-type: none"> I keep my immune system up by eating healthy and exercising. I am young and healthy and would rather develop natural immunity than be vaccinated.
Quasi-scientific rationales	<ul style="list-style-type: none"> Using a lot of probiotics; I have not been sick in over a year. I am pregnant. It is not the current strain of the flu. I don't believe the effectiveness of the vaccine outweighs the risks.
Mistrust of government, pharmaceutical industry	<ul style="list-style-type: none"> Someone is getting kickbacks for pushing the flu shot so much. Stay out of my healthcare, Government! CDC vaccination board members are paid consultants to pharmaceutical companies. They have vested interest in vaccines, not in health and well-being of people.
Vaccine component concerns	<ul style="list-style-type: none"> I don't like thimerosal in the flu shot (or other ingredients). We live in a world full of genetically engineered products therefore I prefer not to place foreign substances in my body. I do not want to put unknown chemicals in my body.

^aSome comments have been edited for length or clarity.

previously described with the addition of free-text options for respondents to further explain their views.^{2,3} Each of the authors independently reviewed the free-text responses and grouped them into themes. Some respondents offered comments that fit >1 theme.

Of 498 respondents, 477 (96%) completed the survey. Among these, 363 (76%) reported receiving the 2013–2014 influenza vaccine. Respondents indicated the following reasons for getting a seasonal influenza vaccine: protect self (91%), protect friends and family (82%), availability of vaccine without cost (65%), protect patients (57%), previously had “the flu” (27%), healthcare provider recommendation (21%), mandatory requirement at a non-VHA workplace (8%), and other (6%). Respondents indicated the following reasons for not getting an influenza vaccine: other (53%), concern about side effects (37%), gives me “the flu” (17%), not needed (11%), does not work (11%), allergy (9%), dislike of shots (8%), healthcare provider recommendation (6%), sick when the vaccine was offered (4%), forgot (4%), no time (4%), attempted but not able (1%), and did not know I needed it (0%).

Among those who indicated that they received the vaccination, 95 individuals (26%) offered a total of 105 comments in the free-text portions of the survey. Among these, 31 respondents had suggestions for improving access or acceptance of the vaccine, 17 reported that convenience was part of the reason they took the vaccine, and 13 indicated that they take the vaccine every year. Four reported that they still became ill with influenza.

Among those who did not receive the vaccine, 65 individuals (57%) made a total of 82 comments in the free-text portions of the survey. Despite having 12 familiar rationales to choose from, most non-vaccinated respondents included “other” as a reason for refusing vaccination. While many of the comments expanded on the 12 rationales offered, 41 comments (50%) offered reasons not already included in the survey. We examined the themes of these comments, finding that 18 respondents cited alternative protection strategies for influenza prevention, while 13 offered a quasi-scientific rationale, 10 expressed mistrust of

the government and pharmaceutical industry, and 9 indicated concern related to vaccine components (Table 1).

Although the results from the multiple-choice portion of our survey were similar to those reported previously, analysis of free-text comments revealed rationales that had not been included on similar surveys.^{2,3} Addressing these rationales may suggest strategies for improving influenza vaccination rates among HCP. The Centers for Disease Control found that influenza vaccination rates among HCP are highest in settings where the vaccination is required.⁴ Absent a mandatory requirement, targeted education remains the principal strategy for increasing influenza vaccination rates. Concerns raised by our survey respondents suggest additional themes to incorporate into educational campaigns. To allay concerns about ingredients or chemicals, highlighting the use of thimerosal-free vaccine may increase acceptance. Additional information about the economic benefits of influenza vaccination, extending to reducing healthcare costs, may create a positive interpretation of possible financial motivations. Details about the potential for someone with mild symptoms to transmit influenza to less fortunate people who lack a robust immune system might appeal to individuals who believe their personal immune system can withstand an influenza infection. This reasoning could be supported by a theme of altruism, asserting that HCP have an ethical and moral responsibility to protect their patients from influenza. Finally, frank acknowledgment that the influenza vaccine is not always effective may increase trust toward the campaign as a whole. This message should be closely coupled with an explanation that the protection conferred from this year's vaccine may help offer personal immunity toward future influenza strains as well as decrease mortality among patients.^{5–7}

Our study has some limitations. Based on the approximate numbers of total employees, we estimate low response rates: 14% at Facility A and 5% at Facility B. Additionally, the survey was sent to all employees at the medical centers rather than only those with direct patient contact. Furthermore, VAMC

employees who refused the vaccine due to strong internal beliefs (ie, concerns about government/pharmaceutical industry) may have been more likely to participate in our survey, compared to those with less emotionally charged reasons (ie, forgot or sick when offered), creating a bias toward those with grievances about the vaccine. Nonetheless, given that 50% of our respondents chose “other” as a reason for declination, we recommend that future survey designs include candid comments from HCP.

ACKNOWLEDGMENTS

Financial support: This work was supported by the Veterans Affairs Healthcare System (T-21 Non-Institutional Alternative to Long-Term Care Grant (G541-3) to RLPJ and the Veterans Integrated Service Network 10 Geriatric Research Education and Clinical Centers (VISN 10 GRECC). RLPJ gratefully acknowledges the T. Franklin Williams Scholarship with funding provided by Atlantic Philanthropies, Inc., the John A. Hartford Foundation, the Association of Specialty Professors, the Infectious Diseases Society of America, and the National Foundation for Infectious Diseases. This work was also made possible through the Clinical and Translational Science Collaborative of Cleveland (UL1TR000439) from the National Center for Advancing Translational Sciences (NCATS) component of the National Institutes of Health and NIH roadmap for Medical Research (RLPJ). Its contents are solely the responsibility of the authors and do not necessarily represent the official views of the NIH.

Potential conflicts of interest: All authors report no conflicts of interest relevant to this article.

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Infect Control Hosp Epidemiol 2015;36(3):362–364

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Achieving “Zero” CLABSI and VAP after Sequential Implementation of Central Line Bundle and Ventilator Bundle

To the Editor—Ventilator-associated pneumonia (VAP) and central-line-associated bloodstream infection (CLABSI) are two common healthcare-associated infections (HAIs) that can result in increased mortality, morbidity, and length of hospital stay among critically ill patients.^{1–5} Recently, several prevention interventions have been divided into the two major care bundles by the Institute for Healthcare Improvement (IHI): the “ventilator bundle” and the “central line bundle.” Many studies have proven that the ventilator bundle and the central line bundle can significantly reduce the incidence of VAP and CLABSI, respectively. However, studies investigating the usefulness of concomitant implementations of these two bundles in the same unit are scarce. At our institution, we sequentially introduced the ventilator bundle and the central line bundle in an intensive care unit (ICU). We evaluated the clinical impact of sequential care bundles on HAI rates, including VAP and CLABSI, in a medical ICU.

This study was performed at a regional teaching hospital in a medical ICU that has 7 adult ICU beds and 1 intensivist. In 2011, we introduced the ventilator bundle, which includes (1) maintenance a semi-recumbent position (ie, 30°–45° elevation of the head to the bed), (2) daily interruption of sedation, (3) daily spontaneous breathing trials, (4) performance of oral care with an antiseptic solution (ie, 0.2% chlorhexidine gluconate), and (5) maintenance of endotracheal tube cuff pressure >20 cm H₂O. In 2013, we further introduced the central line bundle, including (1) hand hygiene, (2) maximal sterile barriers, (3) chlorhexidine gluconate for skin preparation, and (4) avoidance of femoral vein as an access site. Our maintenance bundle includes (1) hand hygiene, (2) proper dressing change, (3) aseptic technique for accessing and changing needleless connector, and (4) daily catheter review. In addition, educational programs were arranged at the same time for the staff members in the ICU, including attending physicians, respiratory